



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,211	02/27/2004	Chein-Wei Jen	BHT-3230-88	4688
<div>7590 07/16/2007 TROXELL LAW OFFICE PLLC SUITE 1404 5205 LEESBURG PIKE FALLS CHURCH, VA 22041</div>			<div>EXAMINER MOLL, JESSE R</div>	
			<div>ART UNIT 2181</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 07/16/2007</div>	<div>DELIVERY MODE PAPER</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	Application No. 10/787,211	Applicant(s) JEN ET AL.	
	Examiner Jesse R. Moll	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) <input type="checkbox"/> Notice of Informal Patent Application
6) <input type="checkbox"/> Other: _____ |
|---|--|

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 April 2007 has been entered.

Withdrawn Objections/Rejections

2. Applicant, via amendment has overcome the objection to claim 4. Therefore, the objection has been respectfully withdrawn.

3. Applicant, via amendment has overcome the rejection to claims 4 under 35 U.S.C. 112, second paragraph. Therefore, the rejection has been respectfully withdrawn.

Claim Rejections - 35 USC § 102

Art Unit: 2181

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5 are rejected under 35 U.S.C. 102(a and e) as being anticipated by Berenbaum et al. (U.S. Patent Number 6658551 B1) herein referred to as Berenbaum.

6. Regarding claim 1, Berenbaum discloses a method for inter-cluster communication that employs register permutation, wherein the clustered functional units (Functional Units [FU]; see fig. 8) have some global registers (Register Files; see fig. 8), and the said clustered functional units exchange data (with Input Crossbar Switch; see fig. 8) without actual data movement (banks are chosen by changing the crossbar switch not by copying data to the other register files; by controlling the crossbar switch, the connections between register files and functional units is changed without moving data) by exchanging data between the said global registers of each cluster (see col. 7, lines 8-15).

Note that crossbar logically switches positions of the global registers, it is interpreted as exchanging data between the registers when viewed in light of the

specification. The specification shows that register data is only virtually exchanged in the same way that Berenbaum discloses.

7. Regarding claim 2, Berenbaum discloses the method for inter-cluster communication that employs register permutation according to claim 1, wherein the register permutation is done by dynamically changing the port mapping between the global registers and the functional units (with Input Crossbar Switch, see fig. 8).

Note that routing data from one place to another is considered mapping. Therefore, changing the destination of the register is considered changing the port mapping.

8. Regarding claim 3, Berenbaum discloses the method for inter-cluster communication that employs register permutation according to claim 2, wherein the said port mapping is done by a routing structure (Input Crossbar Switch; see fig. 8).

9. Regarding claim 4, Berenbaum discloses the method for inter-cluster communication that employs register permutation according to claim 1, wherein the size of said ported register file and number of said ports are both scalable (see cols. 5-7; note the variables N and K showing the scalability).

Further note that in any register file, the size is scalable. It would always be possible with minimal redesign to change the number of registers or ports. The claim merely states that the register file be able to have different sizes (be scalable).

10. Regarding claim 5, Berenbaum discloses the method for inter-cluster communication that employs register permutation according to claim 1, further comprising any number of cluster structures (M; see fig. 8).

Response to Arguments

11. Applicant's arguments with respect to claims 1-5 have been considered but are not persuasive. Even though Berenbaum does not physically move data, registers are logically switched when the crossbar is changed. Data is logically exchanged between registers the same way that it is in Applicant's invention. Applicant's invention and Berenbaum merely change the routing of registers to exchange data.

Conclusion

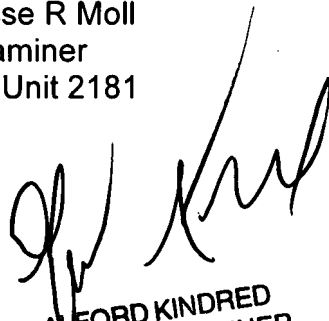
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse R. Moll whose telephone number is (571)272-2703. The examiner can normally be reached on M-F 10:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alford Kindred can be reached on (571)272-4037. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jesse R Moll
Examiner
Art Unit 2181

JM 7/9/2007



ALFORD KINDRED
PRIMARY EXAMINER